Abstract

Hitchin representations are a special family of surface group representations which generalize classical Teichmüller space into higher rank Lie groups. We foucs on the case of SL(3,R) and such a representation gives rise to a convex projective structure on the surface. The associated Hilbert metric determines a marked length spectrum, which gives a map from the Hitchin component to the space of projective geodesic currents. In this talk, we characterize the boundary objects of Hitchin component in geodesic currents as a special family of pseudo-metrics called mixed hexagonal structures. A mixed hexagonal structure decomposes the surface into subsurfaces, where the positive systole part is related to cubic differentials from Labourie-Loftin parametrization of Hitchin components, and the zero systole part is equipped with a lamination.